

2.2.3.1 Superior Coastal Plain Ecological Landscape

General Description

The Superior Coastal Plain is Wisconsin's northernmost Ecological Landscape (Figure 2-3), bordered on the north by southwestern Lake Superior and on the south by the Northwest Sands, the Northwest Lowlands, and the North Central Forest. The climate is strongly influenced by Lake Superior, resulting in cooler summers, warmer winters, and greater precipitation compared to more inland locations. Exposed coastal areas are subject to significant disturbance from windstorms, waves, ice, currents, and periodic water level fluctuations. These disturbance regimes play a significant role in determining both the landform and vegetation characteristics of the shoreline ecosystems.



Figure 2-3. Superior Coastal Plain Ecological Landscape.

The major landform in this Ecological Landscape is a nearly level plain of lacustrine clays that slopes gently northward toward Lake Superior. The clay plain is separated into two disjunct segments by the comparatively rugged Bayfield Peninsula. An archipelago of sandstone-cored islands, the Apostles, occurs in Lake Superior just north and east of the Bayfield Peninsula. Wave carved sandstone cliffs bracket stretches of the Peninsula and also occur along the margins of several of the islands. Sand spits are a striking feature of the Lake Superior shoreline, typically separating the waters of the lake from inland lagoons and wetlands. The spits support rare and highly threatened natural communities such as beaches, dunes, interdunal wetlands, and pine barrens, and these in turn are inhabited by specially adapted plants and animals. The mouths of many of the streams entering Lake Superior are submerged, creating freshwater estuaries. A ridge of volcanic igneous rock, primarily basalt, forms the southern boundary of portions of this Ecological Landscape.

Vegetation

Historically the Superior Coastal Plain was almost entirely forested. A distinctive mixture of white pine, white spruce, balsam fir, paper birch, balsam poplar, trembling aspen, and white cedar occurred on the lacustrine clays. White pine was strongly dominant in some areas, according to mid-nineteenth century notes left by surveyors of the US General Land Office. Mesic to dry-mesic forests of northern hardwoods or hemlock hardwoods were more prevalent on the glacial tills of the Bayfield Peninsula and throughout the Apostle Islands.

Large peatlands occurred along the Lake Superior shoreline, often associated with drowned river mouths and well-developed sand spits. The most extensive of these wetland complexes were on the Bad and St. Louis rivers. A few large peatlands also occurred at inland sites, such as Bibon Swamp, in the upper White River drainage, and Sultz Swamp on the northern Bayfield Peninsula.

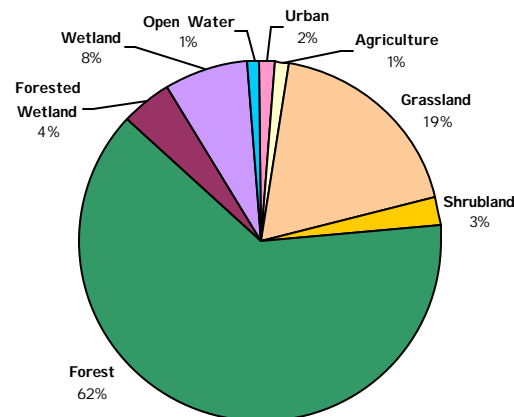


Figure 2-4. Current land cover in the Superior Coastal Plain Ecological Landscape.

The present clay plain forest has been fragmented by agricultural use, and today approximately one-third of this Ecological Landscape is non-forested (Figure 2-4). Most of the open land is in grass cover, having been cleared and then subsequently pastured or plowed. Aspen and birch forests occupy about 40% of the total land area, having increased in prominence over the boreal conifers. On the Bayfield Peninsula, second-growth northern hardwood forests are interspersed among extensive early successional aspen stands. Older forest successional stages are now rare throughout the Superior Clay Plain.

Hydrologic Features

The larger rivers include the St. Louis, Nemadji, Bad, White, Amnicon, Flag, Sand, Raspberry, and Sioux. Smaller streams flowing across the clay plain typically occupy short, relatively straight, steep-sided valleys before emptying into Lake Superior. Other streams originate in the higher elevations of the Bayfield Peninsula and follow meandering courses toward the lake. Inland lakes are rare. Many wetlands still persist, and, collectively, they constitute a regionally significant reservoir of rare plants and animals, intact natural communities, and natural processes. All watersheds have been ranked for groundwater pollution by Wisconsin DNR, and groundwater conditions are among the cleanest in the state. Most watersheds in this Ecological Landscape have not been ranked for watershed, stream, or lake pollution.

Land Use

The total land area for the Superior Coastal Plain Ecological Landscape is approximately 906,000 acres, of which 57% is classified as timberland. Publicly owned lands make up about one-fifth of the area (Figure 2-5); about half of them are county forest, and the remainder are state or federally managed. Two tribal reservations of the Lake Superior Ojibwa -- Red Cliff and Bad River -- are situated along Lake Superior.

Socioeconomics

Socioeconomic data are summarized based on county-level approximations of the Ecological Landscape (referred to as a "region"). Economic data are available only on a political unit basis with counties as the smallest unit. The counties included in this socioeconomic region are Ashland, Bayfield, and Douglas ("Superior Coastal Plain Region").

Recreation is an important contributor to the economy of the Superior Coastal Plain Region. The number of state parks, forests, and recreation areas, as well as acreage of federal lands, is quite high. Forest products and processing industries contribute about 9% to the total industrial output of the region. Agriculture is not a major contributor to the economy. This region not only has the third lowest percent of farmland acreage, but the second lowest market value per acre of products sold, and the third lowest per acre production of both milk and corn. Note that farmland is defined as all land under farm ownership, which includes cropland, pastureland, and woodland. It has seen the greatest decrease in both farm numbers and acreage in agricultural land since 1970, and still ranks as one of the regions with highest agricultural land sales.

The Superior Coastal Plain Region has one of the lowest population densities and growth rates (1970-2000) of all the regions in the state. The population density of the region (19 persons/mi²) is only about one-fifth that of the state as a whole (96 persons/mi²). Although there are few minorities, this region has the largest percentage of Native Americans. Economically, the counties of the Superior Coastal Plain are not very prosperous. Not only are the per capita income and average wage relatively low, but this region has the highest poverty rates for both adults and children and the second highest rate of unemployment of all the regions. The counties in the Superior Coastal Plain are highly dependent on the service and government job sectors with one of the lowest percentages of manufacturing jobs.

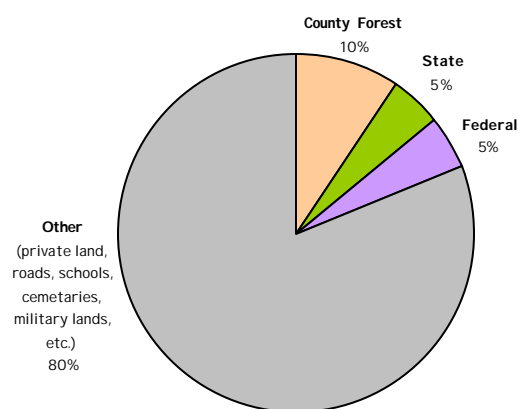


Figure 2-5. Public land ownership in the Superior Coastal Plain Ecological Landscape.

Management Opportunities

- Protection of unique Great Lakes shoreline environments such as the vast Bad River-Kakagon Sloughs; the smaller but biologically rich estuaries at Fish Creek, Sioux River Slough, Sand River, Raspberry Bay, Bark Bay, Lost Creek, Port Wing, Allouez Bay, and the lower St. Louis River; and the wave-carved sandstone cliffs of the northern Bayfield Peninsula.
- Protection of unique geological features and natural communities of the Apostle Islands, including wave-sprayed sandstone cliffs and ledges, tombolos, cusped forelands, and barrier spits, Great Lakes barrens, and old-growth forest remnants of white cedar, yellow birch, and hemlock.
- Protection, management, and restoration of clay plain boreal forest, a greatly altered and diminished forest community that occurs nowhere else in the state, and is important for maintaining the water quality of the streams that feed Lake Superior.
- Increase conifer cover, forest patch size and connectivity, and late successional forests to counter the effects of fragmentation and re-establish diminished habitats.
- Protection, management, and restoration of stream corridors.
- Maintenance of extensive forest habitat on the Bayfield Peninsula.
- Protection of the Bibon Swamp and White River corridor, which links the extensive forests to the south with the vast Bad River-Kakagon Sloughs on Lake Superior.
- Protection and rehabilitation of the Nemadji River corridor, which harbors ecologically unusual rich mesic hardwood forests, floodplain forests, and marshes.
- Protection of numerous rare plant and animal populations, especially those for which Great Lakes habitats have high significance.
- Protection and management of sites used by large numbers of migratory and colonial nesting birds.
- Protection of critical inland, nearshore, and offshore fish habitats.
- Grassland management is possible and potentially valuable in some former agricultural areas. These efforts will be most beneficial on sites where opportunities to manage and restore extensive clay plain forest are negligible or unfeasible.
- Cooperate with the Bad River and Red Cliff bands of the Lake Superior Ojibwa to ensure effective long-term protection of the highly significant natural features occurring on and near Lake Superior tribal lands.

Natural Communities

The following table (Table 2-3) lists the natural communities occurring in the Superior Coastal Plain arranged by the level of opportunity to sustain and manage the community type in this Ecological Landscape. For further explanation of natural communities and opportunities to sustain them, see Section 3.3.

Table 2-3. Natural communities occurring in the Superior Coastal Plain arranged by the level of opportunity to sustain and manage the natural community type in this Ecological Landscape.

Major Opportunity	Important Opportunity	Present
Boreal Forest	Northern Dry Forest	Ephemeral Pond
Great Lakes Barrens	Northern Dry-Mesic Forest	Forested Ridge and Swale
Emergent Aquatic	Northern Hardwood Swamp	
Emergent Aquatic-Wild Rice	Northern Mesic Forest	
Submergent Aquatic	Northern Wet-Mesic Forest	
Interdunal Wetland	Northern Wet Forest	
Open Bog	Floodplain Forest	
Shore Fen	Alder Thicket	
Dry Cliff	Northern Sedge Meadow	
Great Lakes Beach	Shrub Carr	
Great Lakes Dune	Bedrock Shore	
Moist Cliff	Clay Seepage Bluff	